Current priorities for adolescent sexual and reproductive health in Australia

S Rachel Skinner and Martha Hickey

ADOLESCENT SEXUAL AND REPRODUCTIVE HEALTH is an important issue for the Australian population. Pregnancy, childbirth and sexually transmitted infection (STI) are major contributors to overall morbidity in the adolescent age group. Legally induced abortions were the second most common hospital procedure and reason for hospital admission in young women aged 12–24 years in Australia in 1997–1998,[1] and issues relating to family planning and female genital disorders (combined) represented the most common reason young women consulted general practitioners in 1998–1999.[1] The longer-term implications of teenage pregnancy and STI are considerable. If we are to optimise the economic, social and physical health of all Australian adolescents and young adults, we cannot ignore the role that sexual wellbeing plays in this agenda.

ABSTRACT

- The sexual health needs of teenagers differ from those of adults.
- Young sexually active teenagers are at high risk of *Chlamydia trachomatis* genital infection and its complications.
- Teenage pregnancy continues to be a problem in Australia.
- Current preventive strategies and clinical services in this domain of adolescent health in Australia are deficient.
- Australia can learn from the innovative and effective strategies developed in various countries for preventing high-risk sexual behaviours in teenagers.

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Sexual behaviour of teenagers

Adolescents are undergoing developmental processes that may lead to risky sexual behaviours. Adolescence is characterised by a belief in one's immortality,[2] a desire to experiment, the seeking of peer approval, relatively short-term relationships,[3] and unrealistic expectations about the likelihood and consequences of pregnancy.[4] We also know that Australian teenagers are putting themselves at risk of pregnancy and STI. Teenagers are the most frequent users of emergency contraception at Australian Family Planning clinics,[5] 45% of sexually active Australian high-school students do not use condoms consistently,[6] and 31% use condoms without another form of contraception.[7]

As adolescents delay seeking prescription contraception for an average of one year after initiating sexual activity,[8] it is perhaps not surprising that half of adolescent pregnancies occur in the first 6 months of sexual activity.[8] For this reason, and the fact that younger age is a strong risk factor for *Chlamydia trachomatis* (CT) infection,[9-11] effective prevention strategies must include young adolescents, ideally before they become sexually active.

School of Paediatrics and Child Health, University of Western Australia, Princess Margaret Hospital, Subiaco, WA.
S Rachel Skinner, MB BS, PhD, FRACP, Senior Lecturer and Adolescent Physician.
School of Women's and Infants' Health, University of Western Australia, King Edward Memorial Hospital, Subiaco, WA.
Martha Hickey, MRCOG, FRANZCOG, MD, Associate Professor.
Reprints will not be available from the authors. Correspondence: Dr S Rachel Skinner, School of Paediatrics and Child Health, University of Western Australia, Princess Margaret Hospital, Roberts Road, Subiaco, WA 6008. rachels@ichr.uwa.edu.au

STI in Australian teenagers

CT genital infection is one of the most common notifiable diseases in Australia, and the notification rate has been increasing over the past 10 years.[12] Most CT infections occur in the under-25-years age group.[12] As CT infection is often asymptomatic,[11] reported incidence rates are likely to be underestimates. Thus, prevalence data (based on screening of population samples) are essential for estimating the true burden of disease. The few prevalence surveys undertaken in Australian adolescents (albeit limited to small samples) have reported rates of CT infection of up to 28%,[13,14] which is similar to rates reported in the US literature. Aboriginal teenagers represent a particularly high-risk group for CT and gonococcal infections.[12,15]

The health, social and economic consequences of CT and gonococcal infections, particularly repeated infections, are considerable. Ascending infection is the main cause of pelvic inflammatory disease (PID), and adolescents are at greater risk of this complication than adults.[16] PID may lead to tubal infertility, chronic pelvic pain and ectopic pregnancy, with consequent substantial drains on public funds during the adult years.

Teenage pregnancy in Australia

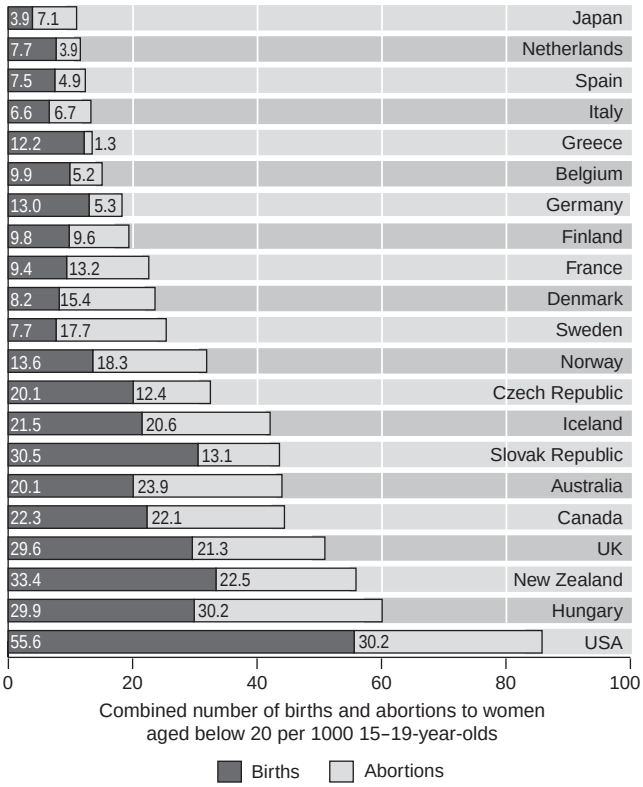
Accurate nationally representative data on teenage pregnancy in Australia, which would be crucial for planning and evaluating prevention programs, are currently unavailable, as most states do not mandate abortion notifications. The reported average national abortion rate in 1997–1999 (based on Medicare claims, which are believed to be an underestimate) was 22 abortions per 1000 teenagers per year, compared with 19 live births.[17] This indicates a higher

teenage pregnancy rate than many other developed countries, and one of the highest teenage abortion rates in the developed world (see Box).[17,18]

The identified correlates of teenage pregnancy in Australia are similar to those described elsewhere.[19-21] The teenage mother in Australia is more likely to be single and a smoker, and to be living in an area of socioeconomic disadvantage.[17] Teenage pregnancies are more likely to have uncertain dates and fewer antenatal visits.[17] Teenage births carry a higher risk of medical complications, including prematurity, low birthweight, the need for neonatal intensive care, and neonatal death.[1,17] Pregnant teenagers who attend antenatal clinics are likely to experience high levels of psychosocial distress, illicit and licit substance use and domestic violence.[22,23]

Young Aboriginal women are over-represented among teenagers giving birth, especially the youngest teenagers.[24] In 1999, 21.3% of Indigenous births were to teenagers, compared with 4.2% of non-Indigenous births.[25] While Aboriginal teenagers are less likely to terminate their pregnancy, they are more likely to have all the antenatal risk factors and to have poor birth outcomes than non-Aboriginal teenagers.[24]

Birth and abortion rates among teenage women in selected OECD countries, expressed per 1000 women aged 15–19 (data are for 1996)[18]



OECD = Organization for Economic Cooperation and Development.

What can be done?

Monitoring and surveillance

In the United States, screening strategies have reduced the prevalence of CT infection[26] and PID,[27] and national guidelines recommend annual screening for CT in all sexually active adolescents.[28] In Australia, the capacity to plan effective adolescent sexual health services and make policy decisions on cost-effective interventions is hampered by the lack of information about rates of STI and pregnancy terminations among teenagers. If, as has been estimated, universal screening of sexually active teenagers for CT is cost-effective in our population when prevalence rates exceed 2%,[29] the availability of reliable data would help in framing a national policy on universal or targeted screening. Further data are urgently required to delineate low-, moderate- and high-risk subgroups of adolescents in Australia, and the causal pathways and contributing factors for STI and pregnancy.

Interventions to prevent high-risk sexual behaviour in adolescents

It has been argued that the constant presence of sexualised images in Western countries creates pressure on adolescents to have sexual relationships. Yet countries such as the United States, the United Kingdom and Australia have not implemented comprehensive sexual-health education programs to teach adolescents the skills to resist these pressures or to protect themselves from adverse consequences. The failure to support such programs is perhaps based on the ill-founded but powerful sentiment that the education of children and young adolescents about contraception and safe sex will promote earlier sexual activity.[30] Inadequate promotion of sexual health is believed to be one of the major reasons for the high rates of unplanned pregnancy and STI among teenagers in these countries.[18] Other factors, such as economic and educational inequality in the teenage years, also contribute to the vastly different rates of teen pregnancy and STI seen in developed nations.[18]

Australia can learn from the knowledge and experience of similar countries in attempting to reduce teenage pregnancy and STI.[18] The Netherlands, which has been very successful in this regard, has been proactive over several decades in ensuring that adolescents learn how to use contraception effectively and face minimal barriers to accessing contraceptive methods.[31] In the United States and the United Kingdom, various interventions to prevent risky sexual behaviour leading to pregnancy and STI have been developed. The few that have been evaluated in controlled trials have reported mixed results. One meta-analysis with stringent inclusion criteria concluded an overall lack of effect from all interventions, including education-based, abstinence-based, clinic-based and multistrategy programs, in preventing teenage pregnancy.[32] A broader systematic review,[33] which included analysis of interventions to prevent unprotected sex, concluded that successful programs simultaneously target several behavioural outcomes and are based on established theories of health-related behaviour and on research into antecedents of sexual and non-sexual health-risk behaviour.

These programs include activities to resist social pressures, use a variety of teaching methods, are of sufficient duration, provide training for teachers or peer teachers, and involve the local community.

Australian initiatives

In Australia, the amount of education teenagers receive about sexual health is variable. A few years ago, the Federal Government developed a promising evidence-based curriculum package, aimed at prevention of HIV/AIDS and other STIs, for use in high schools.[34] It is currently being implemented in government schools to varying degrees in all states (Ann Mitchell, Community Liaison Officer, Australian Research Centre in Sex, Health and Society, La Trobe University, personal communication). In Western Australia, a randomised controlled trial of an infant simulator together with school-based health promotion (the Preconception Intervention Program)[35] is under way (Sven Silburn, Director, Centre for Developmental Health, Telethon Institute for Child Health Research, personal communication). Successful outcomes in changing adolescent behaviour, demonstrated through controlled studies in the Australian population, will promote the wider dissemination and sustainability of such interventions.

Clinical services

In the United States, detailed guidelines for regular provision of preventive healthcare (including sexual healthcare) to adolescents by primary care providers have been established for more than a decade.[36] In Australia, there are no nationally accepted guidelines for adolescent healthcare and very few specialised clinical services.

Adolescents do not access health services in the same ways as adults, and effective services must recognise these differences and plan accordingly. Adolescents have low GP attendance rates,[37] particularly if confidentiality cannot be assured.[38,39] When adolescents do present to GPs they often only complain of minor symptoms,[40] and GPs may lack confidence and experience to engage young people and identify the issues of importance.[41] A small number of programs in Australia educate interested GPs, and at least one has been shown to be effective in improving their skills in interviewing adolescents.[42] Clinic strategies, when informed by principles of effective health promotion, can be successful in reducing adolescent sexual risk behaviours.[43]

It could be argued that sexual health clinics and Family Planning clinics are adequate as providers of sexual health services to adolescents. However, this approach alone will not effectively prevent STI and pregnancy: many adolescents who have recently become sexually active may not consider themselves at risk and consequently may not seek out these services. The few comprehensive youth health services that exist in Australia generally have an established high-risk clientele, and so may be perceived negatively by the general population of teenagers.[39]

As many adolescents face psychological and practical barriers to accessing the existing health services, school-based (or school-linked) health centres, as implemented in some areas of the United States, hold promise. These centres provide confidential care to students, including health education, screening, acute care and mental health services, and many also provide sexual healthcare.[44] School-based clinics have been demonstrated to improve understanding of health issues and access to healthcare in adolescents.[45] This model deserves evaluation in the Australian context.

Teenage sexual health in Australia — the future

It is imperative that Australia develop a coordinated policy to adequately cater for the reproductive and sexual health needs of adolescents. This should include recommendations for the development and implementation of:

- comprehensive evidence-based sexual and reproductive health education, particularly targeting children and younger adolescents;
- clinical services providing comprehensive healthcare to all adolescents in the broader population (barriers to access need to be minimised, and innovative prevention strategies will be required, including training of GPs, the use of school-based or school-linked clinics, and the broader promotion of youth health services);
- evidence-based interventions targeting teenagers at particular risk of STI and pregnancy, as determined by surveillance and the presence of antecedents of high-risk sexual behaviour; and
- accurate surveillance of STI and pregnancy in teenagers and national guidelines and standardised practice for STI screening.

We cannot continue to ignore the high rates of STI among Australian teenagers, their increased risk of developing PID and its complications, and the potentially disastrous consequences of teenage pregnancy. Australia has the 6th highest teenage pregnancy rate among OECD countries.[18] As healthcare providers we have the opportunity to draw from the experience of other nations to create a model of adolescent sexual health promotion. Improving the sexual health of our teenage population will be a secure investment for the future.

Competing interests

None identified.

References

1. Moon L, Meyer P, Grau J. Australia's young people: their health and wellbeing 1999. Canberra: Australian Institute of Health and Welfare, 1999. (AIHW Catalogue No. PHE 19.)
2. Elkind D. Cognitive development. In: Friedman SB, Fisher M, Schinberg SK, Alderman EM, editors. Comprehensive adolescent health care. 2nd ed. St Louis, Mo: Mosby, 1998: 34-37.
3. Overby K, Kegeles SM. The impact of AIDS in an urban population of high-risk female minority adolescents: implications for intervention. *J Adolesc Health* 1994; 15: 216-227.
4. Condon J, Donovan J, Corkindale CJ. Australian adolescents' attitudes and beliefs concerning pregnancy, childbirth and parenthood: the development, psychometric testing and results of a new scale. *J Adolesc* 2000; 24: 729-742.
5. Mirza T, Kovacs GT, McDonald P. The use of reproductive health services by young women in Australia. *Aust N Z J Obstet Gynaecol* 1998; 38: 336-338.

6. Lindsay J, Smith A, Rosenthal D. Secondary students, HIV/AIDS and sexual health 1997. Melbourne: La Trobe University, Centre for the Study of Sexually Transmissible Diseases, 1997. Monograph Series. Report No. 3.
7. Lindsay J, Smith A, Rosenthal D. Conflicting advice? Australian adolescents' use of condoms or the pill. *Fam Plann Perspect* 1999; 31: 190-194.
8. Alan Guttmacher Institute. Sex and America's teenagers. New York: AGI, 1994.
9. Hilger T, Smith EM, Ault K. Predictors of *Chlamydia trachomatis* infection among women attending rural Midwest family planning clinics. *Infect Dis Obstet Gynecol* 2001; 9: 3-8.
10. Han Y, Coles, FB, Hipp S. Screening criteria for *Chlamydia trachomatis* in family planning clinics: accounting for prevalence and clients' characteristics. *Fam Plann Perspect* 1997; 29: 163-166.
11. Burstein GR, Gaydos CA, Diener-West M, et al. Incident *Chlamydia trachomatis* infections among inner-city adolescent females. *JAMA* 1998; 280: 521-526.
12. Roche P, Spencer J, Lin M, et al. Australia's notifiable diseases status, 1999. Annual report of the National Notifiable Diseases Surveillance System. *Commun Dis Intell* 2001; 25: 190-245.
13. Williams S, Forbes JF, McIlwaine GM, Rosenberg K. Poverty and teenage pregnancy. *Lancet* 1987; 294: 20-21.
14. Quinlivan JA, Peterson RW, Gurrin LC. High prevalence of chlamydia and Pap-smear abnormalities in pregnant adolescents warrants routine screening. *Aust N Z J Obstet Gynaecol* 1998; 38: 254-257.
15. Bowden F, Paterson BA, Mein J, et al. Estimating the prevalence of *Trichomonas vaginalis*, *Chlamydia trachomatis*, *Neisseria gonorrhoeae* and human papillomavirus infection in indigenous women in northern Australia. *Sex Transm Dis* 1999; 75: 431-434.
16. Westrom L. Incidence, prevalence and trends of acute pelvic inflammatory disease and its consequences in industrialised countries. *Am J Obstet Gynecol* 1980; 138(7 pt 2): 960-964.
17. van der Klis KAM, Westenberg L, Chan A, et al. Teenage pregnancy: trends, characteristics and outcomes in South Australia and Australia. *Aust N Z J Public Health* 1999; 24: 316-319.
18. UNICEF. A league table of teenage births in rich nations. *Innocenti Report Card* No. 3, July 2001. Florence, Italy: UNICEF Innocenti Research Centre, 2001.
19. Felice M, Feinstein RA, Fisher MM, et al. Adolescent pregnancy — current trends and issues: 1998 American Academy of Pediatrics Committee on Adolescence, 1998–1999. *Pediatrics* 1999; 103: 516-520.
20. Corcoran J. Consequences of adolescent pregnancy/parenting: a review of the literature. *Soc Work Health Care* 1998; 27(2): 49-67.
21. Fraser A, Brockert JE, Ward RH. Association of young maternal age with adverse reproductive outcomes. *N Engl J Med* 1995; 332: 1113-1117.
22. Quinlivan JA, Peterson RW, Gurrin LC. Adolescent pregnancy: psychopathology missed. *Aust N Z J Psychiatry* 1999; 33: 864-868.
23. Quinlivan JA, Evans, SF. The impact of continuing illegal drug use on teenage pregnancy outcomes: a prospective cohort study. *Br J Obstet Gynaecol* 2002; 109: 1148-1153.
24. Westenberg L, van der Klis KA, Chan A, et al. Aboriginal teenage pregnancies compared with non-Aboriginal in South Australia 1995-1999. *Aust N Z J Obstet Gynaecol* 2002; 42: 187-192.
25. Australian Indigenous HealthInfoNet. Summary of Indigenous health. 2003. Available at: http://www.healthinfonet.ecu.edu.au/html/html_keyfacts/keyfacts_summary.htm (accessed Feb 2003).
26. *Chlamydia trachomatis* genital infections — United States, 1995. *MMWR Morb Mortal Wkly Rep* 1997; 46: 193-198.
27. Scholes D, Stergachis A, Heidrich FE, et al. Prevention of pelvic inflammatory disease by screening for cervical chlamydial infection. *N Engl J Med* 1996; 334: 1363-1366.
28. Recommendations for the prevention and management of *Chlamydia trachomatis* infections, 1993. *MMWR Recomm Rep* 1993; 42(RR-12): 1-39.
29. Chlamydia strategy for Victoria (2001–2004). Melbourne: Victorian Department of Human Services, 2001.
30. Stammers T. Doctors should advise adolescents to abstain from sex. *BMJ* 2000; 321: 1520-1522.
31. Ketting E, Visser AP. Contraception in the Netherlands: the low abortion rate explained. *Patient Educ Couns* 1994; 23: 161-171.
32. DiCenso A, Guyatt G, Willan A, Griffith L. Interventions to reduce unintended pregnancies among adolescents: systematic review of randomised controlled trials. *BMJ* 2002; 324: 1426-1430.
33. Kirby D. Effective approaches to reducing adolescent unprotected sex, pregnancy and childbearing. *J Sex Res* 2002; 39: 51-57.
34. Talking sexual health. National framework for education about STIs, HIV/AIDS and blood-borne viruses in secondary schools. Canberra: Australian National Council on AIDS, Hepatitis C and Related Diseases, 1999. Available at: http://www.ancahrd.org/pubs/pdfs/framework.pdf (accessed Jul 2003).
35. The Preconception Intervention Program. Available at: http://www.health.wa.gov.au/mentalhealth/symposium/Indigenous/pdfs/Preconception_intervention_program.pdf (accessed Jul 2003).
36. Guidelines for Adolescent Preventive Services (GAPS). Chicago, Ill: American Medical Association, 1997.
37. Bridges-Webb C, Britt H, Miles DA, et al. Morbidity and treatment in general practice in Australia 1990–1991. *Med J Aust* 1992; 157 Suppl Oct 19: S1-S56.
38. Reddy D, Fleming R, Swain C. Effect of mandatory parental notification on adolescents' use of sexual health services. *JAMA* 2002; 299: 710-714.
39. Booth M, Bernard D, Quine S, et al. Access to health care among NSW adolescents. Sydney: NSW Centre for the Advancement of Adolescent Health, The Children's Hospital at Westmead, May 2002.
40. Patton G. A briefing paper for the National Public Health Partnership. 1999. Available at: http://www.dhs.vic.gov.au/nphp/scopeyth/index.htm (accessed Feb 2003).
41. Veit F. Adolescent health care: perspectives of Victorian general practitioners [MD thesis]. Melbourne: University of Melbourne, 1997.
42. Sanci L, Coffey CMM, Veit FC, et al. Evaluation of the effectiveness of an educational intervention for general practitioners in adolescent health care: randomised controlled trial. *BMJ* 2000; 320: 224-230.
43. St Lawrence J, Brasfield TD, Jefferson KW, et al. Cognitive-behavioral intervention to reduce African American adolescents' risk for HIV infection. *J Consult Clin Psychol* 1995; 63: 221-237.
44. Santelli J, Morreale M, Wigton A, Grason H. School health centers and primary care for adolescents: a review of the literature. *J Adolesc Health* 1996; 18: 357-366.
45. Kisker E, Brown RS. Do school-based health centers improve adolescents' access to health care, health status and risk-taking behavior? *J Adolesc Health* 1996; 18: 335-343.

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